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An overview of research activities on omics and molecular genetics in France

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Three main French organizations conduct scientific research on rubber tree using omics techniques. The chemistry laboratory of organic polymers is a joint research unit of the University of Bordeaux, CNRS, and Bordeaux National Polytechnic Institute. This laboratory has analysed latex proteins since 2011. This team showed that rubber particle membranes from the Hevea latex contain predominantly two proteins, REF1 and SRPP1 involved in poly(cis-1,4-isoprene) synthesis or rubber quality. In Clermont-Ferrand, the Research of the joint research unit "Integrative Physics and Physiology of Fruit and Forest Trees" relates to the responses of the trees to the abiotic factors. They are involved in rubber studies for two decades. They have two research teams working on rubber ecophysiology and genetic determinism of susceptibility to Corynespora cassiicola. They recently sequenced the genome of Corynespora cassiicola. At CIRAD in Montpellier, three research units are involved in agronomy, rubber technology, biotechnology, transcriptomics and molecular genetics studies. Transcriptomics analyses were initiated to better understand Tapping Panel Dryness physiological syndrome and tolerance to South American Leaf Blight. Several genetic maps were built for segregating population established in Brazil, Côte d'Ivoire and Thailand using several types of molecular genetic markers. More recently, large-scale production of SNP markers was initiated using the Genotyping By Sequencing technique.